mellâ quadriplicatâ; labio externo in medio incurvo, extus leviter varicoso.

Differing from *M. lactea* of Kiener in being wider at the anterior termination, and in the outer lip not being so much elevated.

From the West Indies. Varieties are from Belieze, bay of Honduras.

Marginella similis. *Marg. testâ ovali, stramineâ, griseo-nebulatâ, lineis creberrimis interruptim cinctâ; spirâ penè celatâ; aperturâ angustâ, anticè et posticè emarginatâ; columellâ spirâ tumidâ, anticè varicosâ, irregulariter septemplicatâ; labio externo posticè spiram paululùm superante, intus crenulato, extus nigro maculato vix marginato.*

The spire is less concealed, and the margin of reflected lip less distinct than in *M. interrupta*. The colouring is more mottled.

In Mr. Cuming's collection. From the Brazils.

ENTOMOLOGICAL SOCIETY.

August 4th, 1845.—The Rev. F. W. Hope, F.R.S., President, in the Chair.

Mr. Raddon brought for distribution a number of specimens of the rare *Actebia præcox*, and exhibited *Goliathus Drurii* and *torquatus, Mecynorhina frontalis, Petrognatha gigas* and other rare insects from the Gold Coast.

Mr. Douglas exhibited *Adactylus Bennettii* and other *Lepidoptera*, from St. Osyth in Essex. Also illustrations of the transformations of *Tortrix Galiana*, which feeds, in the larva state, on the wormwood, and its parasitic Ichneumon.

Mr. Samuel Stevens exhibited a variety of insects recently captured at Arundel, including specimens of *Claviger foveolatus*, obtained from the nests of two different species of ants.

Mr. Edward Doubleday exhibited drawings of several species of *Papilio*, including *P. Hippodamas*, Bdv., *P. Polyeuctes*, Doubled., and a new species allied to *P. Payeni*, from the Himalayan Mountains. He also described a complicated apparatus for capturing and killing minute *Lepidoptera*, invented by Herr Reissig.

The following memoirs were read:—

"The Completion of the Biography of Fabricius," translated from the Danish by the Rev. F. W. Hope, who announced his intention of presenting the Society with impressions of a portrait of Fabricius, to accompany the memoir in the Transactions.

"Description of a new species of Grasshopper from New South Wales." By W. F. Evans, Esq.

Ephippitytha maculata, Evans. *Wing-cases pale green, each with sixteen to nineteen or twenty roundish spots of a bluish-black colour running along the inner edge of the marginal or principal nervure and the inner margin of the wing-case; wings one-eighth of an inch longer than the wing-cases, of a pale green colour, becoming gradually of a lighter tint towards the outer margin,* *with a pink tinge near the apex (as in the wing-cases) and a single bluish-black spot; tibiæ of the hind legs with four bands of fuscous brown, of which colour are also the two basal tarsi.* Expanse of wings 4½ inches; length of body 1¼ inch.—In Mus. Britann., Hope, and in my own.

"Description of a new species of *Paussidæ* from India." By J. O. Westwood, F.L.S.

The insect in question, forwarded by W. H. Benson, Esq., of the Bengal Civil Service, is closely allied to *Ceratoderus bifasciatus*, forming therewith a separate genus divisible into two subgenera, as follows:—

MELANOSPILUS, nov. gen.

Antennæ clavâ depressâ, quasi 5-articulatâ; palpi maxillares articulo 2do maximo, 4to gracili, præcedenti minori; palpi labiales articulis tribus, 3tio majori ovali apice subtruncato; pedes haud dilatati tibiis apice haud calcaratis tarsisque articulo basali tribus sequentibus majori.

Subgenus 1. *Dimeroderus*, Westw.

Corpus supra opacum plagâ mediâ elytrorum politâ; palpi maxillares articulo 2do ferè rotundato depresso; prothorax bipartitus lateribus angulatis; tibiæ apicibus externè obtusè truncatis.

Sp. 1. Melanospilus (Dimeroderus) Bensoni, Westw. *Luteo-fulvus, prothoracis parte antica angulis productis subacutis, parte postica quasi 4-lobata elytris versus medium plaga magna subtriangulari ad suturam haud extensa.* Long. corp. lin. 3.—Hab. in Indiâ Orientali. D. Benson.

Subgenus 2. *Ceratoderus bifasciatus*, Westw. Arcan. Ent. ii. pl. 58. fig. 1.

"Notes on the Habits of various Indian species of *Paussidæ* and *Cetoniidæ*." By Mr. Benson, in a letter addressed to Mr. Westwood.

The species of *Paussidæ* above described by Mr. Westwood is stated by Mr. Benson to have been captured by him under a brick near the river Ganges, about fifty miles below Cawnpore, last year, in the cold season, and this year, in January, he took another under a stone in a black-ant's nest, between the Savalik range and Saharunpore. On Mr. Benson's estate, about 7500 feet above the level of the sea, at Rockville, Landour, Mussoorie, Dr. Bacon last year took a *Paussus* by sweeping in the grass, closely allied to *Paussus denticulatus*, Westw. Arcan. Ent. ii. pl. 92. f. 1, but which Mr. Benson has subsequently distinguished under the name of *P. Nauceras*. At Rajpore, in the valley of the Dhoon, Dr. Bacon had also taken *P. pilicornis*, Donov., and a larger species as yet unfigured, which Mr. Benson has since described under the name of *P. Baconis*. It was captured in a sweeping-net among grass and bushes.

A small species of *Valgus* (fam. *Trichiidæ*), with four small acute protuberances on the podex, was also forwarded. This species loves to bathe itself in the pollen of dahlias at Landour. (The specimen is so saturated with grease as to be undeterminable.)

He had captured a Cetoniideous insect, which he regarded as the female of *Heterorhina Hopei*, and which was no other than *H. Bengalensis*, as out of hundreds of *H. Hopei* which he had seen and taken there was not one female, whereas all the specimens of *H. Bengalensis* proved to be of that sex; the species should therefore take the name of the male, *Bengalensis* being inapplicable to a hill-species. The wild indigo is a favourite resort of this species and of *H. nigritarsis*, as well as of a coppery *Cetonia*. *H. glaberrima*, Westw., frequents sweating wounds in oaks in great profusion, and is accompanied more sparingly by *Rhomborhina opalina* and *R. apicalis*. *Jumnos Roylii* is abundant in the hollows of oaks, and is frequently taken in flight. A species of *Cetonia* of a velvet-black colour, with a red band round the thorax and a pale golden spot on each elytron, without any visible external difference between the sexes, somewhat resembling *C. tricolor*, but with the thorax rounded and very different from that insect or any *Polybaptus*, occurs chiefly on the *Hibisci*, and especially *Rosa Sinensis*, at Rajpore, and even as high as 7000 feet above the sea. Of *Dynastes Hardwickii*, figured by Capt. Boys in the 'Journal of the Asiatic Society of Bengal,' N.S. no. 54, Mr. Benson had taken two males and a female, the latter without horns; also an intermediate male, with a very short horn on the head and only the humeral horns of the thorax. Many Chinese forms occur at Landour, among them *Oniticellus cinctus*, *Callidea ocellata*, and a *Sagra* which he took in abundance at Rajpore, but it is very local: the males and females differ in the toothing of the hinder tibiæ. When disturbed they throw themselves off a bush, but are active when on the wing. Their brilliancy suffers much in drying.

"Note on the production of a Queen-Bee from a neuter larva, and on the impregnation of the Queen." By Mr. Golding; accompanied by a specimen of the queen's cell artificially produced.

On the 28th of June, 1845, the writer placed a bit of comb containing workers' brood in one of his hives which had lost its queen. Two days afterwards he removed the royal cells which it contained, whereupon the bees immediately (July 1st) commenced three royal cells, from which, on the 12th of July, two queens were hatched, the third having proved abortive. The writer agrees with Mr. Westwood that there are no royal eggs, but only male and female ones, the larvæ produced from the latter being subjected to two distinct modes of treatment; the peculiar treatment of the brood destined to royalty consists, in Mr. Golding's opinion, far more in the singularly different construction of royal cells, than in any subsequent treatment of the brood deposited in them: he has in fact very little faith in the *royal jelly* notion.

It appears certain to the writer that the impregnation of the queen-bee takes place in the open air. Young queens, when but a few days old, have been repeatedly noticed to leave the hive, of which the writer mentions an instance observed by himself, where a young queen, which had left the mirror hive, mounting high in the air on her departure, was found to return after an absence of six minutes, when a small white substance, about as large as a pin's head and somewhat soft and ragged, was seen adhering to the extremity of her body. (This is what is alluded to by Dr. Bevan in the 'Honey Bee,' p. 35, and which Mr. Golding considers to be evidence of fecundation.) He considers that it is invariably the *old* queen of the stock which goes off with the *first* swarm. (See article "Swarming" in Dr. Bevan's 'Honey Bee,' chiefly contributed by the writer: v. Advert. p. viii.) He had traced a *marked* queen from hive to hive, in first swarms, until she was three years and ten months old, the oldest recorded. He had taken much pains in tracing the queens, sometimes slightly notching the tip of the wing, or cutting off an antenna, and always with the above result; indeed, for some days after the first swarm leaves the hive there is no queen at liberty in it, until the senior princess comes forth and commences piping. Another interesting instance to the like effect had occurred during that and the preceding season. A labourer in his employ, George Waters, an excellent practical apiarian, observed last year that, on the coming off of a first swarm, the queen in vain attempted to fly, falling from the stool. He gave her to the swarm, after noticing that one wing was much injured. This swarm was again left single-hived the then present year, and on their swarming he again observed the same disabled queen attempting to join the swarm; thus proving not only that the old queen issues with the first swarm, but also that Hüber was probably right in his idea that one act of impregnation suffices for the life of a queen, as in this case the queen was unable to fly, and therefore there could be no repetition of the act *whilst on the wing*. On the decease of the old emigrating queen-bee, it is of course necessary that a fresh queen should be produced; Mr. Golding has in fact proved that colonies do sometimes—always, he supposes, when needed—raise young queens without swarming. In fact, being convinced that queens after their third season become less prolific, he has sometimes destroyed the old queen of a first swarm before putting it back, purposely that the colony should have a young queen; families which have old queens most frequently failing from their loss or diminished fecundity.

On the 9th of June, 1832, Mr. Golding's Hüber-hive swarmed; and upon examining it directly afterwards, it was found to contain three royal cells sealed up and one unsealed, which was also found sealed up on the 14th. On the 29th of June, 1830, Mr. Humphrey's Hüber-hive swarmed, and on examining it three closed royal cells were found, and five others in various stages, there being certainly no queen at liberty in the hive at the time *.

---

* It is proper to observe, that several of the above observations were written by Mr. Golding in reply to a suggestion made by me to him, that as the swarming of the hive-bee was analogous in so many respects to that of other social insects, it seemed reasonable to suppose that the primary object of the swarming was the impregnation of the queen-bee, and consequently that it was the newly-hatched princess which went off with the swarm, the old queen remaining in the hive not requiring a second impregnation.—J. O. Westwood.

September 1st.—The Rev. F. W. Hope, President, in the Chair.

A new species of Goliath Beetle, sent from Cape Palmas by Dr. Savage, and a new Australian *Phasma*, were exhibited by the President.

Capt. Parry exhibited *Goliathus Smithii*, *Passerinii*, and other rare *Coleoptera* from Port Natal.

Mr. Samuel Stevens exhibited *Mythimna turca*, *Alcis sericearia* and *roboraria*, *Eupithecia togata*, Hb., *Phycita Abietella*, *Graphiphora rhomboidea*, *Polia tincta*, *Triphæna fimbria*, *Cucullia Lychnitis* and other *Lepidoptera*, chiefly from Black Park, most of which had been set according to a plan which he has adopted in order to obtain great uniformity in the position and deflexion of the wing. The plan consists in having a slab of cork cut with a longitudinal groove down the middle for the reception of the bodies of the moths, and with the sides sloped for laying out the wings, the slopes being so cut as to bring the apex and hinder margin of the wing to nearly the same level as the lower portion of the thorax. Setting-boards with different-sized grooves and slopes are of course required for different-sized insects.

Mr. Douglas exhibited eight new species of small *Lepidoptera*, since described and figured in the 'Zoologist.' Also a variety of other rare species, including a specimen of *Orthotænia quadrana*, Hübner, taken at West Wickham on the 27th of May.

Mr. Bedell exhibited numerous specimens of a small moth, *Gracellaria V-flava*, and its metamorphoses, taken in a wine-cellar, the larvæ of which are supposed to feed on *Rhacodium cellare*. Likewise a specimen of the rare *Acronycta Alni*, taken on hazel at Boxhill on the 11th of August.

The following memoirs were read:—

The continuation of a memoir "On the New Holland *Cryptocephalidæ*." By W. W. Saunders, Esq.

PLEOMORPHA, W.W.S.

Head vertical, immersed in the thorax nearly up to the eyes. Antennæ short, 1st joint robust, pyriform, 2nd short, turbinate, 3rd to 6th slender, gradually increasing in length, 7th to 10th broad, triangular, terminal joint broad, ovate. Thorax transverse, rounded and gibbous in front, with the centre of the hind margin produced. Elytra rounded at the apex, forming with the thorax an obtuse oval.

From the distinctly-serrated club of the antennæ of the minute insects composing this genus, the author thinks the true place of it is not far from *Clythra*.

Sp. 1. Pleomorpha Davisii, W.W.S. *Head rufous, with a black transverse line; antennæ rufous, club black; thorax rufous; elytra punctate-striate, testaceous, with the base, suture and apex black.* Length $\frac{10}{100}$ths of an inch.—Taken near Adelaide by Mr. Davis. In Mus. Brit. and Westwood.

Sp. 2. Pleomorpha ruficollis, W.W.S. *Head black, with a patch* *of rufous on the face; antennæ rufous, club black; thorax bright rufous; elytra dark bronzed green, punctate-striate.* (Cryptocephalus æneipennis, Dej.?) Length $\frac{8}{100}$ ths of an inch.—Inhabits Van Diemen's Land. In Mus. Westwood.

Sp. 3. Pleomorpha rufipes, W.W.S. *Head dark bronzy brown; antennæ rufous, club black; thorax and elytra dark bronzed brown; legs bright rufous, with dusky tarsi.* Length $\frac{8}{100}$ths of an inch.—Inhabits Van Diemen's Land. In Mus. Westwood.

BOTANICAL SOCIETY OF EDINBURGH.

Dec. 10, 1846.—Professor Balfour, President, in the Chair.

A letter was read from M. Lange and other Danish botanists, offering to supply Scandinavian specimens in exchange for British, and transmitting a catalogue of the Danish Flora, with the regulations of the Scandinavian Association for the exchange of botanical specimens. In the list there are 1285 Phanerogamous species enumerated, 263 of which are not found in Britain; and thirty-nine species of Ferns, of which six are not British.

The following communications were read:—

1. Dr. Balfour read an account of a botanical trip which he had made with some of his pupils to Clova, Glen Isla, and Braemar, in August last. Dr. Balfour alluded in an especial manner to the Alpine Flora of the British Isles, the Scandinavian type of Prof. E. Forbes, and illustrated it by a complete series of specimens, arranged according to the natural system on pasteboard, so as to be seen at one view. He noticed Prof. Forbes's theory as to the mode in which the plants migrated at the glacial epoch. He also alluded to the geological nature of the district visited, which is the richest in Britain as regards Alpine species, and the character of the Flora on the different kinds of primary rocks, especially granite and mica-slate. Specimens of the rarer species collected during the excursion were exhibited, among which the following are interesting as having been found in new localities, or rediscovered in old ones:—*Carex rupestris*, abundant in Glen Dole, the specimens being unusually large; *Poa Balfourii*, near the falls of the Whitewater, and also in Glen Isla and on Lochnagar; *Poa cæsia*, in Glen Isla; *Poa laxa*, and the variety *flexuosa* of Parnell, Lochnagar and Glen Dole; *Luzula arcuata*, Lochnagar; *Saxifraga rivularis*, in several new stations on Lochnagar, some specimens six inches long; *Gentiana nivalis* in a new spot in Glen Isla, specimens varying from $\frac{1}{10}$th of an inch to six inches in length; *Ranunculus acris*, var. *pumilus*, Wahl., Lochnagar; *Phleum alpinum*, rocks near Loch Brandy; *Carex vaginata*, abundant on Ben na Muick Dhui; *Carex curta*, var. *alpicola*, more correctly *C. Persoonii*, near the summit of Lochnagar; *Woodsia hyperborea*, rocks in Glen Phee; *Hieracium nigrescens*, Ben na Muick Dhui; and *H. inuloides* in Glen Clova.

Dr. Fleming expressed doubts as to the correctness of Prof. Forbes's theory regarding the migration of the Scandinavian Flora, and no-